

REMARKS/ARGUMENTS

Applicants respond herein to the final Office Action dated May 1, 2006. Claims 1-3, 6 and 7 are pending in the present application with claims 1, 6 and 7 being in independent form. A copy of the claims and the present status of each is included herewith for the convenience of the Examiner.

Claims 1-3 and 6 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent Publication 2002/0006678 to Inazumachi et al. ("Inazumachi") in view of U.S. Patent No. 6,457,924 to Yamamoto et al. ("Yamamoto"). Reconsideration of this rejection is respectfully requested.

Independent claims 1 and 6 both recite a power supplying terminal made of an aluminum-nitride-tantalum-nitride-composite-sintered member. As was noted in Applicants' previous response, the susceptor discussed in Inazumachi simply does not disclose the use of tantalum-nitride in the susceptor. The Office Action points to paragraph 68 of Inazumachi as showing the above limitation, however, there is no discussion in this section of Inazumachi that feeding terminal 4 is made of tantalum-nitride. Instead, this section of Inazumachi merely discloses that tantalum powder may be used to form the ceramic conductor of feeding terminal 4.

The Examiner argues that tantalum nitride would form during the sintering process. The Examiner argues that a portion of the tantalum present would be converted to tantalum nitride since both tantalum and nitrogen are present in the manufacturing atmosphere. The Examiner, however, has failed to identify any support for this conclusion. Thus, the Examiner appears to be arguing that the formation of tantalum nitride is somehow inherent to the sintering process in Inazumachi. However, as is well known "[I]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." See M.P.E.P. §2112 IV quoting *Ex parte Levy*, 17 USPQ2d 1461. In the present application, the Examiner has failed to provide support for his conclusion. First, the Examiner has not identified any reference that would suggest that the sintering process would be performed in an atmosphere where excess nitrogen is present. Secondly, the Examiner has not identified any teaching or suggestion that even if the sintering process were performed in such an atmosphere that tantalum nitride would necessarily be formed during the sintering process. For

example, Inazumachi also discloses the use of a tantalum carbide powder in forming the feed terminal 4. Following the Examiner's reasoning, tantalum carbide may also form during the sintering process since tantalum and carbon could be present in the manufacturing atmosphere. Thus, the formation of tantalum nitride does not necessarily result during the sintering process and thus is an inherent result of the sintering process disclosed in Inazumachi.

The Examiner further contends that that Yamamoto teaches that Ta-N is favorably adhered to the AIN to provide large adhesion strength and high thermal conductivity and that it would have been obvious to one of ordinary skill in the art to provide a power supply terminal of a conductive aluminum-nitride-tantalum-nitride-composite-sintered member. Applicants respectfully disagree.

Yamamoto relates to a substrate obtained by filling through holes, or vias, in the sintered product of aluminum nitride. More specifically, Yamamoto discloses that electrical conducting patterns are formed in the surfaces of the aluminum nitride substrate and in particular discloses that these patterns are preferably made using thin sheets of metal. One of the metals that may be used to make these thin sheets is tantalum nitride. Thus, Yamamoto merely discloses the use of a thin metallic sheet of tantalum nitride to form a conducting pattern on a substrate.

Yamamoto, however, does not disclose the claimed conductive aluminum-nitride-tantalum-nitride-composite-sintered-member of the present application. As noted above, Yamamoto discloses using a thin sheet of tantalum nitride to provide conducting patterns on the surface of the aluminum nitride substrate. Yamamoto does not disclose any sort of sintered member other than the aluminum nitride substrate.

Thus, the combination of Yamamoto and Inazumachi suggested by the Examiner fails to disclose an electrode-built-in susceptor including a power supplying terminal "made of a conductive aluminum-nitride-tantalum-nitride-composite-sintered-member containing 50 to 98 weight percent of tantalum-nitride," as is required by claim 1 of the present application, for example.

Further, it would not have been obvious to combine the metallic sheet of tantalum nitride used on the surface of the substrate in Yamamoto with Inazumachi to form a ceramic conductor for use as a feed terminal. As noted above, the feed terminal in Inazumachi is formed using a conducting ceramic composition, while the tantalum nitride sheet in Yamamoto is simply a sheet of a metallic conductor. One of ordinary skill in the art would not attempt to use the sheet of

tantalum nitride disclosed in Yamamoto to produce the ceramic conductor of Inazumachi.

Inazumachi and Yamamoto also fail to disclose a method for manufacturing an electrode-built-in susceptor including “inserting a power supplying terminal which is made of a conductive aluminum-nitride-tantalum-nitride-composite-sintered-member containing 50 to 98 weight percent of tantalum nitride,” as is required by claim 6 of the present application.

Accordingly, it is respectfully submitted that independent claims 1 and 6, and the claims depending therefrom are patentable over the cited art for at least the reasons mentioned above.

Dependent claims 2 and 3 are dependent upon independent claim 1 and include additional recitations which, when combined with the limitations of claim 1, are also neither disclosed nor suggested in Inazumachi or Yamamoto. It is asserted that these claims are patentable as well.

Claim 7 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Inazumachi, Yamamoto and further in view of U.S. Patent No. 6,134,096 to Yamada et al (“Yamada”). Reconsideration of this rejection is respectfully requested.

Claim 7 relates to a method for manufacturing an electrode-built-in susceptor including a step of “filling an aluminum-nitride-tantalum-nitride-composite-sintered-member containing 50 to 98 weight percent of tantalum nitride as a power supplying terminal in the through hole.”

As noted above, Inazumachi and Yamamoto fail to disclose an aluminum-nitride-tantalum-nitride-composite-sintered-member. Further, it is respectfully submitted that none of Inazumachi, Yamamoto and Yamada show or suggest an aluminum-nitride-tantalum-nitride-composite-sintered-member, much less a method of making an electrode-built-in susceptor including a step of “filling an aluminum-nitride-tantalum-nitride-composite-sintered-member containing 50 to 98 weight percent of tantalum nitride as a power supplying terminal in the through hole, “ as is required by claim 7 of the present application.

Accordingly, it is respectfully submitted that claim 7 is patentable over the cited art for at least the reasons mentioned above.

In light of the remarks made herein, it is respectfully submitted that claims 1-3, 6 and 7 are patentable over the cited art and are in condition for allowance.

Accordingly, the Examiner is respectfully requested to reconsider the application and pass this case to issue.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on August 31, 2006:

Max Moskowitz

Name of applicant, assignee or
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Signature

August 31, 2006

Date of Signature

Respectfully submitted,



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